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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/358,206	07/21/99	CARROLL J	WAB-97090

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JAMES RAY & ASSOCIATES
2640 PITCAIRN ROAD
MONROEVILLE PA 15146

EXAMINER	
PEREZ,G	
ART UNIT	**PAPER NUMBER**
2834	

DATE MAILED: 10/14/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/358,206	CARROLL, JOHN B.	
	Examiner	Art Unit	
	Guillermo Perez	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-8 and 11-21 is/are rejected.

7)☒ Claim(s) 9 and 10 is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a)☐ All b)☐ Some * c)☐ None of the CERTIFIED copies of the priority documents have been:

1.☐ received.

2.☐ received in Application No. (Series Code / Serial Number) _____ .

3.☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

14) ☒ Notice of References Cited (PTO-892)
15) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
16) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
17) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
18) ☐ Notice of Informal Patent Application (PTO-152)
19) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12 and 17 to 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites the limitation "said spring" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "said piston extension" in line 13. There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "said end closure" in line 13. There is insufficient antecedent basis for this limitation in the claim.

Claim 17 recites the limitation "said rectifier" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "said piston extension" in line 15. There is insufficient antecedent basis for this limitation in the claim.

Claim 19 recites the limitation "said piston extension" in lines 18 to 19. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

1. Claim 20 is rejected under 35 U.S.C. 102(b) as being anticipated by Noltner (DE2355728).

Referring to claim 20, Li discloses a pneumatically driven electric power generator (figure 1) comprising: a first cylinder (7) having a first end connectable through a first inlet flowpath (11 and 10) to an air supply passage, a second end of said first cylinder being open (20 and 21); a second cylinder (7∝) having a first end connectable through a second inlet flowpath to said air supply passage, a second end of said second cylinder being open (20 and 21); a piston having a magnetic moment associated therewith (2 and 3), said piston having a first end portion (2) and a second end portion (3), said piston being positionable in a first location wherein said first end portion of said piston is disposed within said first cylinder and said second end portion of said piston is disposed outside of said second cylinder, said piston further being positionable in a second location wherein said second end portion of said piston is

disposed within said second cylinder and said first portion of said piston is outside of said first cylinder; so that when said piston is disposed in said first position, air pressure received in said first cylinder through said first inlet flowpath drives said piston toward said second position, whereupon said first cylinder exhausts, and when said piston is disposed in said second position, air pressure received in said second cylinder through said second inlet flowpath drives said piston toward said first position, whereupon said second cylinder exhausts, so that said piston oscillates; and at least one electric coil (5) placed to enclose changing magnetic flux caused by said magnetic moment associated with said piston whereby an emf is generated in said electric coil, so that an external circuit connected to said electric coil receives electric power from said electric coil.

2. Claims 1, 5 to 7, 11 to 12 and 18 to 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Li (U.S. Pat. No. 5,945,749).

Referring to claim 1, Li discloses a pneumatically driven electric power generator (figure 1) comprising: a cylinder having a first end (16) connectable through an inlet flowpath (13) to an air supply passage containing air at a positive pressure, a second end of said cylinder (18) being open; a piston (1) having a magnetic moment associated therewith, said piston being positionable in a first location wherein at least a first portion of said piston is disposed within said cylinder; sealing means (3 and 5) disposed on at least one of an outer surface of said first portion of said piston and an inner surface of said cylinder to prevent loss of air between said piston and said cylinder and permit air pressure in said cylinder to increase when said first portion of said piston is disposed

within said cylinder; said piston also being positionable in a second location wherein said first portion of said piston is outside of said cylinder so that clearance is provided between said piston and said cylinder so that air may exhaust from said cylinder; means (4 and 6) engaging said piston for biasing said piston from said second position toward said first position so that after said cylinder has substantially exhausted, said piston moves to said first position, whereby said piston oscillates, moving back and forth between said first position and said second position, driven by air supplied through such air supply passage to said cylinder; and at least one electric coil (7) placed to enclose changing magnetic flux caused by said magnetic moment associated with said piston whereby an emf is generated in said electric coil, so that an external circuit connected to said electric coil receives electric power from said electric coil.

Referring to claim 5, Li discloses a cylinder extension (16 and 18) at least one of formed integrally with and attached to said cylinder, said cylinder extension having an inner surface having a transverse dimension greater than a transverse dimension of said cylinder, said cylinder extension having an end closure; and an exhaust passage (13 and 15) connected to at least one of said cylinder extension and said end closure.

Referring to claim 6, Li discloses that said piston (1) further includes a piston extension (14 and 22) at least one of formed integrally with and attached to said piston, at least a portion of said piston extension contacting at least a portion of said cylinder extension to provide positional constraint to said piston.

Referring to claim 7, Li discloses that said portion of said piston extension contacting at least a portion of said cylinder extension is an outer surface of said piston extension and said portion of said cylinder extension is an inner surface of said cylinder extension.

Referring to claim 11, Li discloses that said means disposed on said pneumatically driven electric power generator for biasing that said piston from said second position to said first position is a spring (4 and 6).

Referring to claim 12, Li discloses that said spring is a compression spring disposed between said piston extension and said end closure.

Referring to claim 18 and 19, Li discloses that said magnetic moment associated with said piston is provided by a magnet attached to at least one of said piston and said piston extension (1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Carrol (U.S. Pat. No. 5,350,222).

Li discloses a pneumatically driven electric power generator as described on item 2 above. However, Li does not disclose that said sealing means is an O-ring in a groove formed on said outer surface of said first portion of said piston.

Carrol discloses that said sealing means is an O-ring (79 and 80) in a groove formed on said outer surface of said first portion of said piston for the purpose of avoiding escape of air between the piston and the cylinder.

It would have been obvious at the time the invention was made to modify the pneumatically driven electric power generator of Li and provide it with O-ring sealing means in a groove formed on said outer surface of said first portion of said piston for the purpose of avoiding air to escape between the piston and the cylinder producing better functioning of the generator.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Feigel et al. (U.S. Pat. No. 5,826,952).

Li discloses a pneumatically driven electric power generator as described on item 2 above. However, Li does not disclose that said inlet flowpath includes an air filter for excluding foreign material from said cylinder.

Feigel et al. disclose that said inlet flowpath includes an air filter (62) to exclude foreign material from said cylinder for the purpose of prevent the ingress of dirt particles.

It would have been obvious at the time the invention was made to modify the pneumatically driven electric power generator of Li and provide it with an inlet flowpath including an air filter for the purpose of excluding foreign material from said cylinder.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Noltner.

Li discloses a pneumatically driven electric power generator as described on item 2 above. However, Li does not disclose that said inlet flowpath includes a choke to control an impedance of said inlet flowpath.

Noltner discloses that said inlet flowpath includes a choke (11 and 10) for the purpose of controlling an impedance of said inlet flowpath.

It would have been obvious at the time the invention was made to modify the pneumatically driven electric power generator of Li and provide it with an inlet flowpath including a choke for the purpose of controlling an impedance of said inlet flowpath.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Dunne et al. (U.S. Pat. No. 3,661,051).

Li discloses a pneumatically driven electric power generator as described on item 2 above. However, Li does not disclose that at least one of said outer surf ace of said piston extension and said inner surface of said cylinder extension is at least one of made from and coated with a low friction material.

Dunne et al. disclose that at least one of said outer surface of said piston extension and said inner surface of said cylinder extension is at least one of made from and coated with a low friction material (column 4, lines 46 to 57) for the purpose of reducing wear on the pistons.

It would have been obvious at the time the invention was made to modify the pneumatically driven electric power generator and provide it with at least one of said outer surface of said piston extension and said inner surface of said cylinder extension made from and coated with a low friction material as disclosed by Dunne et al. for the purpose of reducing the wear on the pistons surface during operation.

Claim 13 to 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Ball et al. (U.S. Pat. No. 5,890,460).

Li discloses a pneumatically driven electric power generator as described on item 2 above. However, Li does not disclose that said exhaust passage includes a muffler to reduce noise released from said generator.

Ball et al. disclose that said exhaust passage includes a muffler to reduce noise released from said generator (1178) for the purpose of reducing noise emitted by the engine and the generator.

It would have been obvious at the time the invention was made to modify the pneumatically driven electric power generator of Li and provide it with an said exhaust passage including a muffler for the purpose of reducing noise released from said generator.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to connect the electric coil to a full bridge rectifier since it was known in the art that the full bridge rectifier are used to supply DC electric power whenerver a net flux through the coils is changing.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the electric actuated shutoff valve, with the piston type control valve disclose by Li since the examiner takes Official Notice of the equivalence of the electric actuated shutoff valve and the piston type control valve for their use in the electric generator structure art and the selection of any of these known equivalents to prevent air flow through said generator would be within the level of ordinary skill in the art.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Noltner in view of Li.

Noltner discloses a pneumatically driven electric power generator as described on item 1 above. However, Noltner does not disclose that said generator further includes a spring engaging said piston to bias said piston toward one of said first position and said second position to facilitate starting said generator when air is supplied through said first air supply passage and said second air supply passage.

Li discloses that said generator further includes a spring (4 and 6) engaging said piston to bias said piston toward one of said first position and said second position to facilitate starting said generator when air is supplied through said first air supply passage and said second air supply passage for the purpose of inducing the oscillation of the piston inside the cylinder.

It would have been obvious at the time the invention was made to modify the pneumatically driven electric power generator of Noltner and provide it with a spring

engaging said piston to bias said piston toward one of said first position and said second position to facilitate starting said generator when air is supplied through said first air supply passage and said second air supply passage as disclosed by Li for the purpose of providing oscillating movements to the piston.

Allowable Subject Matter

Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-5841 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

GP
October 10, 1999

NESTOR RAMIREZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800